

Claims

1. A method for manufacturing plate-shaped information carriers such as CDs, DVDs and the like, wherein a disc is injection molded and the disc is provided with at least one label, the label containing at least one light reflective layer which is visible at the side proximal to the disc.
- 5 2. A method according to claim 1, wherein the label is applied through in-mold labeling.
3. A method according to claim 1 or 2, wherein the disc is injection molded in a master mold such, that electronic information playable by a light beam, in particular a laser beam, is provided in the disc, while the disc is
10 provided with the label for the purpose of, during use, reflecting light, at least for the greater part, entering through the disc.
4. A method according to any one of the preceding claims, wherein the label comprises at least one light sensitive layer on which, with the aid of a light beam, in particular laser light, electronic information can be stored,
15 thereby manufacturing a CD or DVD recordable or similar recordable information carrier.
5. A method according to any one of the preceding claims, wherein the label comprises at least one light sensitive layer on which, with the aid of a light beam, in particular laser light, electronic information can be stored,
20 thereby manufacturing a CD or DVD rewriteable or similar rewriteable information carrier.
6. A method according to any one of the preceding claims, wherein the reflective layer is printed on the label or is applied with a printer.
7. A method according to any one of claims 1 – 5, wherein the reflective
25 layer is applied on the label by means of sputter technique.
8. A method according to any one of the preceding claims, wherein the disc contains electronic information readable with a light beam or the like, and

wherein the label is provided with at least one layer in which, with the aid of light, electronic information can be provided, which information is also readable with a light beam.

9. A method according to any one of the preceding claims, wherein the labels are manufactured with the aid of in place cutting, directly prior to or during their insertion in a mold for in-mold labeling.

10. A method for manufacturing an optically readable information carrier, in particular according to any one of the preceding claims, wherein through a suitable playing device such as a CD or DVD player, optically readable information is provided on the information carrier as a pattern of flats, which pattern has been provided in particular by printing or printer techniques.

11. A method according to claim 10, wherein the pattern has been provided on a label, which label is provided on a carrier during formation of the information carrier, in particular by in-mold labeling.

12. A method according to any one of the preceding claims, wherein a mold is used with at least one mold cavity, wherein in the or each mold cavity at least one moveable wall part is provided which can be positioned into a first position where the respective mold cavity has a relatively large volume and, with the aid of driving means, can be moved to a second position, where said volume of the respective mold cavity is relatively small with regard to the volume when said wall part is in the first position, while, during movement of the respective wall part from the first to the second position, plastic is spread in the mold cavity.

13. A method according to claim 12, wherein said wall part is moved from the first to the second position so fast that in the plastic, adiabatic heat development occurs, so that the flow properties of the plastic are positively influenced.

14. A method according to any one of the preceding claims, wherein a method according to NL 1021421 is used.

15. The use of in-mold labeling technique for the manufacture of plate-shaped information carriers such as CDs and DVDs.

16. An information carrier such as a CD or DVD, provided with a plastic disc and a label, which label contains a light reflective layer proximal to the
5 disc.

17. An information carrier according to claim 16, wherein the information carrier is a recordable or rewriteable CD or DVD.

18. An information carrier, in particular according to claim 16 or 17, wherein optically readable information is provided in the form of a pattern of flats, which pattern, preferably, is provided through printing or printer
10 techniques.

19. An information carrier according to claim 18, wherein said pattern is provided on a label applied through in-mold labeling.

20. An apparatus for manufacturing information carriers, comprising:
15 - an injection mold with at least one cavity for forming a plastic disc;
and

- labeling means for applying on said disc a label provided with a light reflective layer.

21. An apparatus according to claim 20, wherein the labeling means are
20 designed for providing the label on the disc in said at least one mold cavity.

22. An apparatus according to claim 20, wherein the labeling means are designed for providing the label on the disc outside said at least one mold cavity.

23. An apparatus according to any one of claims 20 - 22, wherein
25 further, means are provided for forming the labels from a film web, prior to or during placement of the labels.

24. An apparatus according to any one of claims 20 - 23, wherein the apparatus is designed for in-mold labeling the disc.

25. An apparatus according to any one of claims 20 – 24, wherein the apparatus is designed for providing on the disc at least two layers, while at least one layer is provided in the form of a label.

26. An apparatus according to any one of claims 20 – 25, wherein at
5 least one moveable wall part is provided with which the volume of the at least one cavity can be adjusted during an injection molding cycle.

27. An apparatus according to claim 26, wherein driving means are provided for said at least one moveable wall part with which this wall part can be moved so fast that in plastic in the respective cavity, adiabatic heat
10 development occurs.